

Remarks

The Applicants have amended Claim 16 to recite that the reinforcing fiber layers are bonded to each other. Support may be found throughout the Applicants' specification such as on page 16 in the initial paragraph at line 3. Entry of the above amendment into the official file and consideration on the merits is respectfully requested.

Claims 16, 19 and 21-27 stand rejected under 35 USC §103 over the combination of Kimura and Stewart with Sewell as evidenced by Mazumdar. The Applicants note with appreciation the Examiner's detailed comments hypothetically applying that combination against those claims. The Applicants nonetheless respectfully submit that the combination fails to result in a method that discloses, teaches or suggests the Applicants' claimed method. Details follow.

The rejection frankly acknowledges that the primary reference, Sewell, fails to disclose the Applicants' claimed heating of the substrate up to a resin curing temperature and the Applicants' claimed specific first fiber volume content of the reinforcing fiber substrate or the relationship of the first fiber volume content to the target fiber volume target. The Applicants agree. Thus, the rejection turns to Kimura and Stewart, respectively, to cure those deficiencies. The Applicants respectfully submit, however, that assuming *arguendo* that one skilled in the art were to import the teachings of Kimura and Stewart into Sewell, the resulting methodology would still be different from the Applicants' claimed methodology.

The reason for this is that the combination fails to disclose, teach or suggest the Applicants' claimed aspect wherein the reinforced fiber layers are bonded to each other. In that regard, Stewart discloses in paragraph [0015] that the impregnation speed of the resin and high Vf are in a tradeoff relationship. However, this portion of Stewart merely discloses the conventional understanding of the difficulty of obtaining a high Vf. The Applicants respectfully submit that there is no disclosure,

teaching or suggestion for making the Vf at an initial preform stage small relative to a target Vf. In any event, there is no disclosure of particles between the layers.

On the other hand, and in sharp contrast, by the Applicants' bonding of the reinforcing fiber layers, which form a perform, to each other and fixing them into specified positions, the form of the perform is stabilized. In other words, Vf can be intentionally stabilized at a low volume content. This is not disclosed, taught or suggested by Stewart. Further, in the process where the resin is evacuated to increase Vf after the resin is injected into the perform with a low Vf which is in stabilized form, the formation can be stabilized because the reinforcing fiber layers are bonded to each other. As a result, the impregnation property of resin and high Vf can both be satisfied. This is completely unexpected to those skilled in the art upon a combination of Stewart with any of Sewell and Kimura (as well as Mazumdar).

Section 7.4.2 of Mazumdar discloses a prepreg. and does not disclose how a resin should be impregnated into a perform before it is impregnated with resin. Further, there is no disclosure with respect to particles between layers. Thus, if one skilled in the art were to hypothetically combine Mazumdar with Stewart, Kimura and Sewell, there would be no provision of the Applicants' claimed reinforcing fiber layers being bonded to each other.

Kimura also fails to disclose, teach or suggest that the reinforcing fiber layers are bonded to each other. Thus, all three of Kimura, Stewart and Mazumdar fail to disclose, teach or suggest the Applicants' claimed reinforcing fiber layers bonded to each other.

Why is this important? This is important because Sewell also fails to disclose, teach or suggest the Applicants claimed reinforcing fiber layers bonded to each other. As a consequence, even if one skilled in the art were to import all of the teachings of the secondary references into Sewell, the primary reference, the resulting methodology would still fail to disclose, teach or suggest

a method which comprises forming a reinforcing fiber structure wherein reinforcing fiber layers are bonded to each other. As a consequence, the combination is inapplicable to all of Claims 16, 19 and 21-27. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicants

TDC/vp
(215) 656-3381